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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/492,761	01/27/2000	Teiichirou Chiba	VX992060	1341

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EXAMINER
CHU, CHRIS C

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/492,761	CHIBA ET AL.	
	Examiner	Art Unit	
	Chris C. Chu	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *13 December 2001* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. The amendment filed on December 13, 2001 has been received and entered in this office action.

Amend claims: 1 – 5.

New claims: 6 – 9.

Specification

2. The disclosure is objected to because of the following informalities: on page 2, line 4 of the specification of the response refers "[R] 0.9 mm" which should be --0.9 mm --. In other word, the specification needs a clean version of correction.

Appropriate correction is required.

Claim Objections

3. Claim 9 is objected to because of the following informalities: in line 1, "a dot" should be --said dot-- or --the dot--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai.

Note Fig. 7 of Iwai, where he/she discloses the claimed invention except for a dot mark having a maximum length of 1 to 13 μm on an inner wall face of a notch formed on an outer peripheral face thereof. However, it would have been an obvious matter of design choice to change the dot mark to have a maximum length of 1 to 13 μm on an inner wall face of a notch formed on an outer peripheral face thereof, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). The ordinary artisan would have been motivated to modify Iwai in the manner described above for at least the purpose of reducing time to form the dot mark on an inner wall face of a notch.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al.

Yano et al. discloses a semiconductor wafer with a notch formed on an outer peripheral face thereof (32 in Fig. 5) except for a dot mark having a maximum length of 1 to 13 μm on an

inner wall face of a notch formed on an outer peripheral face thereof. However, such a difference is regard as nothing more than obvious designs variation of Yano et al., because Yano et al. discloses the marks on the side surface portion (18 in Fig. 5) of the side surface of the semiconductor wafer. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to place the dot mark having a maximum length of 1 to 13 μm on an inner wall face of a notch formed on an outer peripheral face thereof. The ordinary artisan would have been motivated to modify Yano et al. in the manner described above for at least the purpose of preserving the marks. Further, the limitation "a dot mart having a maximum length of 1 to 13 μm" is an obvious matter of design choice to change the dot mark to have a maximum length of 1 to 13 μm, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). The ordinary artisan would have been motivated to modify Yano et al. in the manner described above for at least the purpose of reducing time to form the dot mark on an inner wall face of a notch.

7. Claims 2 ~ 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. as applied to claim 1 above, and further in view of Oishi et al.

Yano et al., as modified, discloses the claimed invention except for upper and lower edge line portions of the inner wall face of the notch are respectively chamfered to thereby constitute upper and lower inclined faces and the dot mark is formed on the inclined faces. However, Oishi et al. shows that an upper and lower inclined faces (3 in Fig. 1b) and the dot mark is formed on the inclined faces (4 in Fig. 1b). Thus, it would have been obvious to one of ordinary skill in the

art at the time when the invention was made to further modify Yoshida by including the upper and lower inclined faces and the dot mark is formed on the inclined faces as taught by Oishi et al. The ordinary artisan would have been motivated to further modify Yoshida in the manner described above for at least the purpose of reducing residual work stress or thermal stress on a wafer (column 1, lines 45 ~ 48).

Regarding claims 3 and 6, since Yano et al., as modified, does not limit the angle of an inclination of at least one inclined face to any particular or specific degree, the reference discloses encompasses all well known an angle of an inclination of at least one inclined face relative to the surface of the semiconductor wafer including "equal to or smaller than 30 degree" (see Fig. 1b of Oishi et al.).

Regarding claims 4 and 7, Yano et al., as modified, discloses a surface roughness of at least one inclined face is equal to or smaller than 1 μm (column 2, lines 9 ~ 14).

Regarding claim 5, Yano et al., as modified, discloses the dot mark is formed on either of one of the upper and lower inclined faces (see Fig. 1b of Oishi et al. and Fig. 2 of Yano et al.).

Regarding claim 8, Yano et al., as modified, discloses the dot mark to be formed by irradiating a laser beam (read column 6, lines 3 ~ 6).

Regarding claim 9, Yano et al., as modified, discloses the claimed invention except for a dot mark has a height in the range of 0.005 to 5 μm. However, it would have been an obvious matter of design choice to change the dot mark to have a height in the range of 0.005 to 5 μm, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). The ordinary artisan would have been motivated to modify

Iwai in the manner described above for at least the purpose of reducing time to form the dot mark on an inner wall face of a notch.

Response to Arguments

8. Applicant's arguments with respect to claims 1 - 9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu
Examiner
Art Unit 2815

c.c.
February 20, 2002

EDDIE LEE
SUPERVISORY PATENT EXAMINER
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